

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A thermal processing susceptor holding a substrate subjected to thermal processing comprising:

a flat receiving surface having a region larger than the planar size of said substrate for receiving the entirety of said substrate; and

a tapered surface annularly enclosing the peripheral edge of said receiving surface for specifying said receiving surface, wherein

the lower end of said tapered surface is concatenated to said peripheral edge of said receiving surface and said tapered surface is formed to upwardly broaden while the gradient of said tapered surface with respect to said receiving surface is at least 5° and less than 30°, and the average surface roughness of said tapered surface is not more than 1.6 μm .

2. (Canceled)

3. (Currently Amended) A thermal processing susceptor holding a substrate subjected to thermal processing, comprising a cavity storing said substrate in thermal processing, wherein

said cavity has a flat bottom surface for receiving the entirety of said substrate and an inclined surface annularly enclosing the peripheral edge of said bottom surface,

the gradient of said inclined surface with respect to said bottom surface is at least 5° and less than 30°, and

the average surface roughness of said inclined surface is not more than 1.6 μm .

4. (Canceled)

5. (Previously Presented) A thermal processing apparatus irradiating a substrate with flash light thereby heating said substrate, comprising:

a light source having a plurality of flash lamps;
a chamber, provided under said light source, comprising a chamber window enabling transmitting flash light emitted from said light source; and
a holding element substantially horizontally holding said substrate in said chamber,
wherein

said holding element has a thermal processing susceptor comprising:
a flat receiving surface having a region larger than the planar size of said substrate where flash light from said plurality of flash lamps heats said substrate received on said flat receiving surface, and
a tapered surface annularly enclosing the peripheral edge of said receiving surface for specifying said receiving surface, and
the lower end of said tapered surface is concatenated to said peripheral edge of said receiving surface and said tapered surface is formed to upwardly broaden while the gradient of said tapered surface with respect to said receiving surface is at least 5° and less than 30°.

6. (Original) The thermal processing apparatus according to claim 5, wherein the average surface roughness of said tapered surface is not more than 1.6 μm .

7. (Previously Presented) The thermal processing apparatus according to claim 6, wherein

each of said plurality of flash lamps is a xenon flash lamp, and
said holding element further has an assistive heater preheating held said substrate.

8. (Currently Amended) A thermal processing susceptor holding a substrate subjected to thermal processing, comprising:

a flat receiving surface having a region larger than the planar size of said substrate for receiving the entirety of said substrate;

a first tapered surface annularly enclosing the peripheral edge of said receiving surface for specifying said receiving surface; and

a second tapered surface annularly enclosing the peripheral edge of said first tapered surface, wherein

the lower end of said first tapered surface is concatenated to said peripheral edge of said receiving surface and the lower end of said second tapered surface is concatenated to the upper end of said first tapered surface while said first tapered surface is formed to upwardly broaden, an opening specified by the upper end of said second tapered surface is wider than said receiving surface, the gradient of said second tapered surface with respect to said receiving surface is larger than the gradient of said first tapered surface,

the gradient of said first tapered surface with respect to said receiving surface is at least 5° and less than 30° , and

the average surface roughness of said first tapered surface is not more than $1.6\text{ }\mu\text{m}$.

9. - 10. (Canceled)

11. (Previously Presented) The thermal processing susceptor according to claim 8, wherein

the gradient of said second tapered surface with respect to said receiving surface is at least 45° and not more than 90° .

12. (Previously Presented) A thermal processing apparatus irradiating a substrate with flash light thereby heating said substrate, comprising:

a light source having a plurality of flash lamps;

a chamber, provided under said light source, comprising a chamber window transmitting flash light emitted from said light source on its upper portion; and

a holding element substantially horizontally holding said substrate in said chamber, wherein

said holding element has a thermal processing susceptor comprising:

a flat receiving surface having a region larger than the planar size of said substrate where flash light from said plurality of flash lamps heats said substrate received on said flat receiving surface, and

a first tapered surface annularly enclosing the peripheral edge of said receiving surface for specifying said receiving surface, and

a second tapered surface annularly enclosing the peripheral edge of said first tapered surface, and

the lower end of said first tapered surface is concatenated to said peripheral edge of said receiving surface and the lower end of said second tapered surface is concatenated to the upper end of said first tapered surface while said first tapered surface is formed to upwardly broaden, an opening specified by the upper end of said second tapered surface is wider than said receiving surface, and the gradient of said second tapered surface with respect to said receiving surface is larger than the gradient of said first tapered surface.

13. (Previously Presented) The thermal processing apparatus according to claim 12, wherein

each of said plurality of flash lamps is a xenon flash lamp, and
said holding element further has an assistive heater preheating held said substrate.

14. - 16. (Canceled)

17. (Previously Presented) A thermal processing apparatus irradiating a substrate with flash light thereby heating said substrate, comprising:

a light source having a plurality of flash lamps;

a chamber, provided under said light source, comprising a chamber window transmitting flash light emitted from said light source on its upper portion; and

a holding element substantially horizontally holding said substrate in said chamber,
wherein

said holding element has a thermal processing susceptor comprising:

a flat receiving surface having a region larger than the planar size of said substrate where flash light from said plurality of flash lamps heats said substrate received on said flat receiving surface, and

a tapered surface annularly enclosing the peripheral edge of said receiving surface for specifying said receiving surface, wherein

the lower end of said tapered surface is concatenated to said peripheral edge of said receiving surface while said tapered surface is formed to upwardly broaden, and

said tapered surface has such a gradient that an end of said substrate slides up along said tapered surface when said substrate thermally expands while said end is in contact with said tapered surface.

18. (Previously Presented) The thermal processing apparatus according to claim 17, wherein

only the surface of said substrate expands and convexly warps when said substrate thermally expands.

19. (Previously Presented) A thermal processing apparatus irradiating a substrate with flash light thereby heating said substrate, comprising:

a light source having a plurality of flash lamps;

a chamber, provided under said light source, comprising a chamber window transmitting flash light emitted from said light source on its upper portion; and

a holding element substantially horizontally holding said substrate in said chamber, wherein

said holding element has a thermal processing susceptor comprising:

a flat receiving surface having a region larger than the planar size of said substrate where flash light from said plurality of flash lamps heats said substrate received on said flat receiving surface, and

a tapered surface annularly enclosing the peripheral edge of said receiving surface for specifying said receiving surface, wherein

the lower end of said tapered surface is concatenated to said peripheral edge of said receiving surface while said tapered surface is formed to upwardly broaden, and

said tapered surface has such a gradient that an end of said substrate slides up along said tapered surface without restricting thermal expansion of said substrate when said substrate received on said receiving surface thermally expands and said end comes into contact with said tapered surface.

20. (New) The thermal processing susceptor according to claim 1, wherein said thermal processing susceptor holds a substrate subjected to thermal processing when performing thermal processing with flash light emitted from a flash lamp.

21. (New) The thermal processing susceptor according to claim 3, wherein said thermal processing susceptor holds a substrate subjected to thermal processing when performing thermal processing with flash light emitted from a flash lamp.

22. (New) The thermal processing susceptor according to claim 8, wherein said thermal processing susceptor holds a substrate subjected to thermal processing when performing thermal processing with flash light emitted from a flash lamp.

23. (New) The thermal processing susceptor according to claim 1, further comprising a flat peripheral edge surface concatenated to an upper end of said tapered surface.

24. (New) The thermal processing susceptor according to claim 3, further comprising a flat peripheral edge surface concatenated to an upper end of said inclined surface.